

### Abstract of the Disclosure

A method for fabricating a CMOS image sensor having a characteristic of a reduced dark current includes the steps of: a) providing a semiconductor structure, wherein the semiconductor structure includes a photodiode and peripheral elements formed on a semiconductor substrate; b) forming an insulating layer on the semiconductor structure; c) forming a hydrogen containing dielectric layer on the insulting layer; d) diffusing hydrogen ions contained in the hydrogen containing dielectric layer into a surface of the photodiode, thereby removing a dangling bond; and e) removing the hydrogen containing dielectric layer.